REMARKS

Claims 1, 4-16, 18-24 and 26-30 remain pending in the application.

Claims 1, 4, 5 and 11-13 over Peyla in view of Mathe

In the Office Action, claims 1, 4, 5 and 11-13 were rejected under 35 USC 103(a) as allegedly being obvious over U.S. Pat. No. 6,539,063 to Peyla et al. ("Peyla") in view of U.S. Pat. No. 6,389,069 to Mathe ("Mathe"). The Applicants respectfully traverse the rejection.

Claims 1, 4, 5 and 11-13 recite a programmable infinite impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions.

The Office Action alleges that Peyla discloses a programmable infinite impulse response filter in Fig. 5, element 104 and at col. 2, lines 44-50 to implement a **plurality** of transfer functions in Figs. 4 and 5, element 245, 335U and 330L and at col. 14, lines 5-20 and col. 17, lines 60-67 to select any one of a **plurality** of infinite impulse response filter transfer functions for the programmable infinite impulse response filter in Fig. 4, element 104 (See Office Action, page 2).

A thorough search of Peyla fails to reveal an element 104. Peyla does disclose an infinite impulse response filter in Fig. 4 as element 215. Within IIR filter 215 are a first-stage coefficient multiplier for multiplying a coefficient against samples of filtered, complex signal, and a subsequent accumulator which accumulates the weighted samples output by coefficient multiplier, and the delayed weighted samples output by a feedback delay circuit (See Peyla, col. 14, lines 20-25). A second stage coefficient multiplier, which weights accumulated output samples by a predetermined factor, 1-a, and feedback delay circuit, together provide filter functions well known in the art of IIR filters (See Peyla, col. 14, lines 25-29).

Thus, Peyla relies on a second stage coefficient multiplier and a feedback delay circuit to provide IIR filter functions. However, Peyla fails to even mention use of a transfer function **anywhere** within the system (contrary to the Examiner's allegation), much less disclose or suggest a programmable infinite

impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions, as recited by claims 1, 4, 5 and 11-13.

The Examiner acknowledges that Peyla fails to disclose a finite impulse response filter for receiving an output of an infinite impulse response filter as input where a digital equalizer at least one of corrects and equalizes impairments caused in a high speed transmission signal (See Office Action, page 2). The Examiner relies on Mathe to allegedly make up for the deficiencies in Peyla to arrive at the claimed features. The Applicants respectfully disagree.

Mathe is relied on to disclose a finite impulse response filter for receiving an output of an infinite impulse response filter as input where a digital equalizer at least one of corrects and equalizes impairments caused in a high speed transmission signal. However, claims 1, 4, 5 and 11-13 recite a finite impulse response filter to receive an output of an infinite impulse response filter, the infinite impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions.

Mathe discloses a finite impulse response filter to receive an output of an infinite impulse response filter (Fig. 1). An input signal is processed by a first IIR filter 42 executing a first transfer function and subsequently processed by a second IIR filter 44 executing a second transfer function (See Mathe, Fig. 1)

Thus, although Mathe appears to disclose a finite impulse response filter to receive an output of an infinite impulse response filter, Mathe **fails** to disclose a finite impulse response filter to receive an output of an infinite impulse response filter, the infinite impulse response filter to implement **any** of a **plurality** of infinite impulse response filter transfer functions (as controlled by a filter selector), as recited by claims 1, 4, 5 and 11-13.

Thus, even if it were obvious to modify Peyla with the disclosure of Mathe (which it is not since the Examiner's suggested modification would require a complete redesign of Peyla without proof Peyla would benefit from such a modification to perform Peyla's function), the theoretical result would fail to disclose or suggest the claimed features, i.e., a **plurality** of infinite impulse response filter transfer functions, much less an infinite impulse response filter to implement **any** of a **plurality** of infinite impulse response filter transfer functions

(as controlled by a filter selector), as recited by claims 1, 4, 5 and 11-13.

For at least all the above reasons, claims 1, 4, 5 and 11-13 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 6-10 over Peyla in view of Mathe and Boyd

Claims 6-10 were rejected under 35 USC 103(a) as allegedly being obvious over Peyla in view of Mathe, and further in view of U.S. Pat. No. 6,438,162 to Boyd et al. ("Boyd"). The Applicants respectfully traverse the rejections.

Claims 6-10 are dependent on claim 1, and are allowable for at least the same reasons as claim 1.

Claims 6-10 recite a programmable infinite impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions.

As discussed above, Peyla modified by the disclosure of Mathe fails to disclose or suggest a programmable infinite impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions, as recited by claims 6-10.

The Office Action relies on Boyd to allegedly make up for the deficiencies in Peyla modified by the disclosure of Mathe to arrive at the claimed invention. The Applicants respectfully disagree.

Boyd appears to disclose a method and apparatus for restoring digital pulses within a data transmission system which have degraded due to the attenuation and distortion inherent in a data medium (Abstract; col. 3, lines 50-60).

Boyd discloses correcting a data signal caused by attenuation and distortion inherent in a data medium. However, Boyd fails to disclose or suggest use of an IIR filter, much less a programmable infinite impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions (as controlled by a filter selector), as recited by claims 6-10.

Thus, even if it were obvious to modify Peyla with the disclosure of

Mathe and Boyd (which as discussed above, it is not) would still fail to disclose, teach or suggest a programmable infinite impulse response filter to implement any of a **plurality** of infinite impulse response filter transfer functions, as recited by claims 6-10.

For at least all the above reasons, claims 6-10 are patentable over the prior art of record. It is therefore respectfully requested that the rejections be withdrawn.

Claims 14-16, 18-24 and 26-30 over Peyla in view of Mathe and Simmons

Claims 14-16, 18-24 and 26-30 were rejected under 35 USC 103(a) as allegedly being obvious over Peyla and Mathe, and further in view of U.S. Pat. No. 6,195,414 to Simmons et al. ("Simmons"). The Applicants respectfully traverse the rejections.

Claims 14-16, 18-24 and 26-30 recite at least one of correcting for and equalizing impairments caused in a received T1/E1 data signal by firstly filtering a received T1/E1 data signal using a infinite impulse response digital filter and adaptively adjusting an output of the infinite impulse response digital filter to accurately match an **inverse response** of a transmission channel used to transmit said received T1/E1 data signal.

The Examiner acknowledges that Peyla fails to disclose a very important feature of the claims, i.e., an adjustment process to accurately match an **inverse response** of a transmission channel used to transmit a received data signal (See Office Action, page 5). However, claims 14-16, 18-24 and 26-30 specifically recite a system and method of adaptively adjusting an output of an infinite impulse response digital filter to accurately match an inverse response of a transmission channel used to transmit a received **T1/E1 data signal**. Thus, any modification of Peyla that is directed to OFDM signals, i.e., **wireless transmissions**, to correct for and equalize impairments caused in a received T!/E1 data signal, i.e., a data signal transmitted over a **wired connection**, is **nonsensical**. Any modification of Peyla would at best correct for and equalize impairments caused in **wireless transmissions**. Thus, Peyla fails to disclose or suggest a solution to a problem related to a T1/E1 data signal, much less

disclose or suggest at least one of correcting for and equalizing impairments caused in a received T1/E1 data signal by firstly filtering a received T1/E1 data signal using a infinite impulse response digital filter and adaptively adjusting an output of the infinite impulse response digital filter to accurately match an **inverse response** of a transmission channel used to transmit said received T1/E1 data signal, as recited by claims 14-16, 18-24 and 26-30.

The Examiner alleges Mathe disclose a FIR as an adjustment process to accurately match an inverse response of a transmission channel used to transmit a received signal in Fig. 1, element 20 and at col. 5, lines 58-67 and col. 10, lines 16-17 (See Office Action, page 5). However, a thorough review of Mathe in Fig. 1, element 20 and at col. 5, lines 58-67 and col. 10, lines 16-17 (and the rest of Mathe) fails to reveal Mathe even acknowledging the existence of an inverse response.

Moreover, Mathe is directed toward digital cellular telecommunications (See col. 1, lines 16-19). Thus, even if Mathe disclosed an adjustment process to accurately match an inverse response of a transmission channel used to transmit a received data (which Mathe fails even mention an **inverse response** of a transmission channel), Mathe would at best disclose a system and method of adjustment process to accurately match an inverse response of a transmission channel used to transmit a received data in a digital cellular telecommunications system. Mathe fails to disclose or suggest application to a **wired** data signal, much less to T1/E1 data signal, as recited by claims 14-16, 18-24 and 26-30.

The Office Action relies on Simmons to disclose a received T1/E1 data signal (See Office Action, page 6).

As discussed above in relation to Peyla and Mathe, Simmons is the only reference of the three reference used to reject claims 14-16, 18-24 and 26-30 to have any relevance to T1/E1 data communications. However, even Simmons **fails** to acknowledge the existence of an inverse response related to a T1/E1 data signal, as recited by claims 14-16, 18-24 and 26-30.

Thus, even if it were obvious to modify Peyla with the disclosure of Mathe and Simmons (which it is not since the three systems are completely

unrelated), the theoretical result would fail to even acknowledge the existence of the existence of an inverse response related to a T1/E1 data signal, much less disclose or suggest at least one of correcting for and equalizing impairments caused in a received T1/E1 data signal by firstly filtering a received T1/E1 data signal using a infinite impulse response digital filter and adaptively adjusting an output of the infinite impulse response digital filter to accurately match an **inverse response** of a transmission channel used to transmit said received T1/E1 data signal, as recited by claims 14-16, 18-24 and 26-30.

For at least all the above reasons, claims 14-16, 18-24 and 26-30 are patentable over the prior art of record. It is therefore respectfully requested that the rejections be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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